AMENDMENTS TO THE SPECIFICATION:

Please REPLACE the paragraph beginning at page 1, line 5, with the following rewritten paragraph:

-- The present invention relates to an object collaboration apparatus for performing collaboration processing such as interaction and cooperation among a group of computers or objects. More particularly, ~~it~~ the present invention relates to an object collaboration apparatus for providing a system on a computer network ~~which~~ that can ~~adjusts~~ adjust to environmental changes and progressive system changes flexibly by generating and organizing a plurality of processes dynamically in an object-oriented environment. --

a1

Please REPLACE the paragraph beginning at page 1, line 12, with the following rewritten paragraph:

-- As ~~the~~ computer networks ~~has~~ have become widespread in recent years, the systems in which a plurality of objects, which are distributed on a computer network, perform a process while collaborating with each other ~~has~~ have been increasing. ~~Researches~~ Research for techniques for object collaboration ~~system mainly~~ systems focuses mainly on the object oriented programming technologies and software component technology. One example of an object oriented programming ~~technologies~~ technology is CORBA (Common Object Request Broker: Architecture and Specification), which is a common specification for operating distributed objects, issued by ~~the association~~ OMG (Object Management Group), which has been established in order to standardize and promote object-oriented technology. --

a2

Please REPLACE the paragraph beginning at page 2, line 16, with the following rewritten paragraph:

-- It is also necessary to be ~~full~~ fully aware of the relationship between the objects. In other words, it is necessary to make clear what kind of processing is conducted by each object, and which transmission parameters are required for the processing. --

a3

Please REPLACE the paragraph beginning at page 2, line 22, with the following rewritten paragraph:

-- When thinking of human communication, vague interaction often happens in the real word. For example, when a person tries to solve a problem, he/she utilizes his/her own resources or asks other people for collaboration. In the case of utilizing ~~the~~ one's own resources, problem solving is considered from various view points. Also, in the case of asking others for help, it is possible to ask either a specific person for help, or to broadly request collaboration from participants. In the case of broadly asking an unspecified person for collaboration, the reaction of the participants varies in many ways. Some who have a solution or the resources to handle it may present an answer and collaborate. Others may give advice by passing on their own experience and knowledge, even if that does not directly present a solution or provide handling resources. Still others might ignore the inquiry because of their total indifference. In other words, whether the participant reacts to a request or not depends on the participant. Furthermore, when the participant decides to react to the request, how the participant does depends on the participant. --

Please REPLACE the paragraph beginning at page 3, line 4, with the following rewritten paragraph:

-- In general, with respect to a request for a job between human beings, when a of plurality participants offer collaboration responding to the request, the initiator of the request selects the most appropriate participant, for example the person with the highest ability or the person most readily available, and assigns the request to that person. --

Please REPLACE the paragraph beginning at page 4, line 7, with the following rewritten paragraph:

-- In order to achieve the first configuration mentioned above, it is not enough simply to provide an application as a component, a framework in which objects dynamically provide and organize functions while interacting with each other is necessary. However, when collaborating objects are ~~in intimate relationship~~ intimately related, depending on each other's internal condition and function, it is difficult to dynamically construct functions by the interaction of these objects. Therefore, in order to dynamically construct functions by collaboration, it is necessary to

define a loosely coupled relationship between collaborating objects. --

Please REPLACE the paragraph beginning at page 4, line 19, with the following rewritten paragraph:

-- This "awareness" model acknowledges a condition or exchanging information in which communication entities are not involved directly and ~~purposively~~ purposefully, in addition to the communication behavior. Such "awareness" information, in fact, influences the variations of behavior including the communication behavior. --

Please REPLACE the paragraph beginning at page 11, line 6, with the following rewritten paragraph:

-- The present invention relates to an object collaboration apparatus which distributedly processes tasks while maintaining a high degree of flexibility and freedom for such collaboration processing as communication, interaction, and cooperation between distributed objects. The first configuration is to process many kinds of information as messages flowing in communication channels defined as common fields, using a message action reaction model in which individual computer systems or individual application programs operating in a computer system, serving as objects, react independently, and then to flexibly change an operation of the entire system by changing the relationship between a message and an action. The second configuration is to select an object for a task by using a bidding system. More specifically, a task initiator object sends a requesting message (i.e. call for proposal message) over the network, and objects that can offer to process the task reply with a bidding message (i.e. proposal message) in response to that requesting message. The task initiator object selects the most appropriate object and ~~reply~~ replies with the bid awarding message (i.e. proposal accepting message) to the bid–winning object among the objects. --

Please REPLACE the paragraph beginning at page 15, line 2, with the following rewritten paragraph:

-- Numeral 501 denotes a task initiator object. Numeral 502 denotes service objects that can provide a task processing service and make a ~~bid~~ bidding message (i.e. proposal message) that corresponds to a ~~task request~~ requesting message (i.e. call for proposal message).

Numeral 503 shows an arbitrating object that, when ~~bid~~ bidding messages (proposal messages) are sent by more than one service object, selects ~~a~~ one service object from those service objects and send a ~~bid-winning~~ bid awarding message (i.e. proposal accepting message) to ~~it~~ the selected service object. Numeral 504 denotes a shared communication channel. In Fig. 5, the arbitrating object 503 is separate from the task initiator object 501, but the arbitrating object 503 also can be a part of the task initiator object 501 as a bid awarding portion, so that the task initiator object 501 itself carries out arbitration and bid awarding (i.e. proposal accepting). --

Please REPLACE the paragraph beginning at page 15, line 23, with the following rewritten paragraph:

-- In Fig. 7, which is a block diagram showing the internal structure of the service object 502, numeral 701 denotes a controlling portion. Numeral 702 denotes a message receiving portion. Numeral 703 denotes a reaction table storing the action content corresponding to the requesting messages (call for proposal messages). Numeral 704 denotes an action executing portion which executes a task for which processing is requested. Numeral 705 denotes functions and applications managed by the action executing portion. Numeral 706 denotes a message sending portion for sending bidding ~~message~~ messages (proposal messages). Numeral 707 denotes a bidding portion that, when an action corresponding to a received requesting message (call for proposal message) is contained in the reaction table 703, returns a bidding message (proposal message). In short, the service object shown in Fig. 2 is provided with a bidding portion 707. --

Please REPLACE the paragraph beginning at page 16, line 10, with the following rewritten paragraph:

-- A bidding portion 707 of the service object 502 performs the bid processing when it reacts to a ~~request~~ requesting message (call for proposal message), and calculates a bidding value for the bidding. The bidding value can be, for example, a weight according to the current load of the service object. A bidding message (proposal message) including the bidding value is sent to the shared communication channel 504 via the message sending portion 706. Fig. 11 shows an example of the sent message format. --

Please REPLACE the paragraph beginning at page 16, line 18, with the following rewritten paragraph:

-- In Fig. 8, which is a block diagram showing the internal structure of the arbitrating object 503, numeral 801 denotes a controlling portion. Numeral 802 denotes a message receiving portion. Numeral 803 denotes a reaction table storing action content corresponding to messages. Numeral 804 denotes a storage portion for a request waiting matrix which registers service requests sent from initiator objects. Numeral 805 denotes a request adding portion, which registers the service request messages (call for proposal messages) sent from the initiator object into the request waiting matrix storage portion 804. Numeral 806 denotes a bid storage portion, which accepts ~~a~~ bidding messages (proposal messages) and stores the bidding messages (proposal information) until the bid is awarded. Numeral 807 denotes an awarding portion which determines ~~an~~ a selected object according to the bidding message (proposal message) registered in the bidding messages storage portion 806. Numeral 808 denotes a message sending portion, which sends out ~~bid winning~~ a bid awarding message (i.e. proposal accepting message) with the bidding result. --

Please REPLACE the paragraph beginning at page 17, line 3, with the following rewritten paragraph:

-- First, a user requests a service via the task request interface 602 in the task initiator object 501 (step S1201). Based on a task assignment obtained with the task request interface 602, the task initiator object 501 sends ~~the request~~ a requesting message (call for proposal message) into the shared communication channel 504 via the message sending portion 601 (step S1202). The message format in this case is shown in Fig. 9. For example, an ID for a ~~task request~~ requesting message (call for proposal message) can be "query 1." This requesting message (call for proposal message) reaches all the objects since it flows in the shared communication channel 504. --

Please REPLACE the paragraph beginning at page 17, line 11, with the following rewritten paragraph:

-- The requesting message (call for proposal message) "query 1" reaches each service object 502 and arbitrating object 503. The arbitrating object 503 registers a task object ID1 of

the received requesting message (call for proposal message) into the request waiting matrix storage portion 804 with the request adding portion 805 (step S1203). On the other hand, based on the accepted requesting message (call for proposal message), the service object 502 refers to the reaction table 703 shown in Fig. 10, and checks whether a corresponding action is listed (step S1204). When making a bid in response to the ~~request~~ requesting message (call for proposal message) and composing a bidding message (proposal message), the service object 502 calculates a bidding value (step S1205). The bidding value is calculated based on a load ratio of the object according to a bidding system described below. The service object 502 returns the bidding message (proposal message) composed on the basis of the calculated bidding value (step S1206). --

Please REPLACE the paragraph beginning at page 17, line 32, with the following rewritten paragraph:

-- Then, the awarding portion 807 in the bidding object awards the bid and selects a prospective object from the plurality of objects (step S1208). The bid awarding (the proposal accepting) is performed objectively, using bidding value, bidding order, and communication time as parameters, in accordance with a bidding system described below. --

Please REPLACE the paragraph beginning at page 18, line 4, with the following rewritten paragraph:

-- The awarding portion 807 selects an object by a bidding process, ~~then it notifies~~ sends a bid an awarding message (proposal accepting message) to the selected object via the message sending portion 808 (step S1209). For example, the bid awarding message (proposal accepting message) comprises information such as "service object ID," which can specify an action content, as a subject, and "get" expressing the awarding of a bid as a predicate, as is shown in Fig. 11(b). --

Please REPLACE the paragraph beginning at page 18, line 10, with the following rewritten paragraph:

-- At the same time that the awarding portion 807 sends out the bid awarding message (proposal accepting message), it deletes the registered "service object ID" from the waiting

matrix in the request waiting matrix storage portion 804. --

Please REPLACE the paragraph beginning at page 18, line 13, with the following rewritten paragraph:

-- The selected object receives the bid awarding message (proposal accepting message) indicating the bid awarding result, and executes the action with the action executing portion 704 in response to the "service object ID" in the bid awarding message (proposal accepting message) with reference to the reaction table 703 (step S1210). --

Please REPLACE the paragraph beginning at page 21, line 18, with the following rewritten paragraph:

-- In the distributed processing of a task according to the bidding systems described above, it is preferable that the requesting object itself runs and provides the desired service when no service object makes a bid (proposal) for the ~~task processing request~~ requesting message (call for proposal message). With such a system, a service which is not available by bidding becomes available, or a service which is not available because of other computer's load ratio becomes available, the load can be autonomously distributed more flexible. --

Please REPLACE the paragraph beginning at page 23, line 11, with the following rewritten paragraph:

-- When the terminal 1601 wants to do a large load calculation, it sends out a requesting message (call for proposal message) [terminal ID, query, x,], shown in Fig. 17(a), into the shared communication channel 1603. Each CPU server object 1602 has the reaction table 703 shown in Fig. 17(b), and in response to the requesting message (call for proposal message), the CPU server object returns a bidding message (proposal message) [server object ID, bid, CPU server ID, CPU power] shown in Fig. 17(c), which has the CPU power, indicating CPU processing resources, as a parameter. The terminal 1601 which is the requesting object selects a CPU server object from among the CPU server objects 1602a – 1602c that have returned the bidding messages (proposal message), and then awards the bid. For example, the terminal 1601 selects the CPU server object with the largest processing resources (1602c). The requesting object sends out an application code and processing data together with a bid

awarding message (accepting message) to the CPU server object 1602c that has become the bid-winning object. The CPU server object 1602c that has become the bid-wining object executes the application code, processes the received data, and returns the results to the initiator object 1601. This operation is illustrated in the flowchart in Fig. 18. --